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09/931,973	08/17/2001	Yosuke Yamada	10417-091001 / F51-137504	5424
26211	7590	03/10/2004	EXAMINER	
FISH & RICHARDSON P.C. 45 ROCKEFELLER PLAZA, SUITE 2800 NEW YORK, NY 10111			MENON, KRISHNAN S	
			ART UNIT	PAPER NUMBER
			1723	

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Claims 2,4,5,7,and 8-11 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2,4,5,7,and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-07-060074 in view of Zha (US 6,156,200).

JP-07-060074 teaches a filter device comprising a filter cylinder, plurality of hollow fiber membranes having a bundled end, and a free end spread in the fluid (see fig 1), injection means for injecting fluid and gas to the plurality of hollow fibers (4 - lumen side, 1-outside the lumen, fig 1) to agitate the hollow fibers as in claim 2. The floating bubbles spreading the fibers and removing the deposits is "process". "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a

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product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re *Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

JP-74 does not teach means for injecting fluid and gas at the center portion of the hollow fibers to outwardly radiate the fluid and gas other than through the lumen of the hollow fibers. Zha teaches injecting liquid and gas under pressure to the center of the bundle of fibers through a porous pipe from the bottom of the vessel to outwardly radiate for agitating the fibers (see fig 5 and 6; abstract, and col 7 lines 13-23). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Zha in the teaching of JP-74 for introducing liquid and gas to the center of the bundle for proper distribution of liquid or gas for improved agitation of the hollow fibers.

Independent Claim 4 add further limitations of a funnel member in the bottom as in claim 4 (see fig 1). Deposits precipitating in the funnel is “process” – In re *Thorpe*.

Claim 5 adds the further limitation of a recovery chamber in the filter cylinder below the funnel chamber, which is not taught by JP-74. Zha provides a drain tank below the filter cylinder (see fig 5-schematic). It would be obvious to one of ordinary skill in the art at the time of invention that a chamber could be provided to collect the reject fluid below the funnel chamber of JP-74 for draining the reject fluid from the filter cylinder as taught by Zha.

Independent Claim 7 adds the further limitation of a backwash chamber for storing filtrate and for providing fluid for backwash (see 5, fig 1 of JP-74), and the filter

as vertically disposed, in addition to the limitations of claim 5. Both JP-74 and Zha references teach the back-flush using filtrate. However, filtrate pressurized to flow inot the plurality of fibers ... is process – in re Thorpe.

Claim 8 adds the further limitation over claim 2,5 or 7: cylinder ID 1.5 to 3 times the hollow fiber bundle ID, which JP-74 in view of Zha does not teach. However, it would be obvious to one of ordinary skill in the art at the time of invention to provide a cylinder ID sufficient to have free movement of the fibers inside the cylinder.

Claim 9 and 10 add further limitations over claims 2,5 or 7 as follows: the injection pipe penetrating the bottom surface of the cylinder in claim 9; it extends 1/3 to 2/3 through the height of the bundle in claim 10. JP-74 does not teach an injection pipe. Zha teaches the injection pipe (see fig 5 and pipe 16, fig 6). It would be obvious to one of ordinary skill in the art at the time of invention to have the teaching of Zha in the teaching of JP-74 for proper liquid and gas distribution for improved agitation of the fibers because the injection pipe penetrates from the bottom and to a distance 2/3 of the bundle.

Claim 11 adds the further limitation over claims 1,2,4,5 and 7 of injecting raw fluid and air through the injection pipe, which is not taught by JP-74. Zha teaches injecting air and fluid through the injection pipe (abstract; col 7 lines 13-23). It would be obvious to one of ordinary skill in the art at the time of invention to have the teaching of Zha in the teaching of JP-74 for proper liquid and gas distribution for improved agitation of the fibers by injecting fluid and air.

Claim 12 adds the further limitation over claim 1: the injection pipe has holes in the circumference, which is not taught by JP-74. Zha teaches injection pipe with holes (fig 6, col 7 lines 13-23). It would be obvious to one of ordinary skill in the art at the time of invention to have the teaching of Zha in the teaching of JP-74 for proper liquid and gas distribution for improved agitation of the fibers by providing the holes in the injection pipe for the distribution of the fluid and air.

Response to Arguments

Applicant's arguments filed 2/9/04 have been fully considered but they are not persuasive.

Applicant's amendments to the claims are functional and related to process, and does not limit the claims by structure. Injecting "fluid and gas" is functional, the structure in the references are capable of injecting fluid and gas together, and the references provide sufficient disclosure to provide mixture of fluid and gas. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims

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cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). The process limitations of the claims are dealt with in the rejection.

Conclusion

This action is in response to an RCE, and is made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Krishnan Menon
Patent Examiner


W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700